NEVARC NEWS VK3ANE

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The monthly magazine of the
North East Victoria Amateur Radio Club http://nevarc.org.au/
An Affiliated club of Wireless Institute of Australia
An Affiliated club of Radio Amateur Society of Australia Inc.

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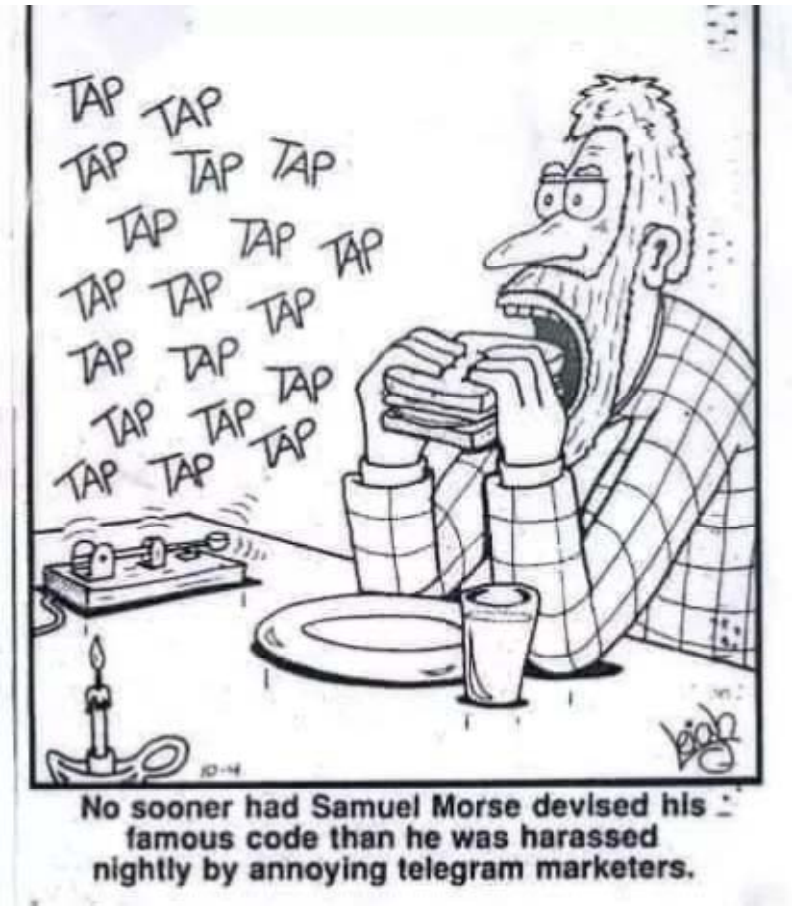
Next Meeting
Sunday 11th July
Belviour Guides Hall,
6 Silva Drive West Wodonga



The "Tree Antenna" RCC Aug & Oct 2006 – Dave/WB7ESV

What is unique about this antenna is that it is only a tree.
The tree is used as a Gamma or Shunt fed vertical.
To make this work, we drove a 3 ½" deck screw into the tree (you need to make contact with the sap vein), at about 15' above the ground (15' to 20' will work).
We attached a wire to the screw, extended the wire 2' perpendicular to the tree, tied a rope to the wire at the 2' point, tied the other end of the rope to a tree limb and dropped the wire to the ground.
At the ground we drove a 3' ground rod 2 feet out from the base of the tree and attached a rope to the ground rod and to the wire to keep the wire tight.

At the feed-point end of the wire we connected an MFJ-901B tuner strapped for "WIRE" operation and connected the tuner ground to the ground rod.
Coax was connected and run to the operating position in a tent.
To tune the antenna, an MFJ-269 SWR Analyser was connected to the tuner input and the tuner adjusted for minimum SWR at the centre of the operating band. The antenna is capable of operation on 10 - 80 meters.
The tree height should be no shorter than 30 feet and any wire antenna tuner will work.
If you are in an area that frowns on antennas and you have a tree that is at least 30. Tall, give it a try.

What you will need to build the Tree Antenna is: A tree that is at least 30' tall, a 3# nail or wood screw, (not galvanized), 20'- # 12 - # 16 AWG copper wire (can be solid or stranded, un- insulated or insulated), a 4' ground rod, wire clamp for the ground rod, 2-egg insulators and an antenna tuner that can be remotely adjusted, (ICOM AH-4, SGC SmartTuner, Home Brew with small motors to operate the variable capacitor(s) and inductor, etc).
If you decide to 'Home Brew' a tuner, there are several in the ARRL Amateur Radio Handbook that will work very well.

Solder one end of the copper wire to the nail/screw.
At about 15'- 18' up the side of the tree drive the nail/ screw into the tree so as to penetrate the sap vein of the tree. (This is important for RF conduction.)
Draw the wire out 2' perpendicular from where you drove the nail/screw and support the wire with an egg insulator tied to a rope which is tied off to a limb of the tree and let the rest of the wire drop down to the ground.
Drive the ground rod into the ground 2' out from the base of the tree leaving about 3' of the rod above ground level. Attach a short piece of rope to an egg insulator and attach the other end of the insulator to the copper wire so that the insulator/wire is about 6' above the top of the ground rod. Leave enough wire to connect to the tuner.

Attach a short piece of rope to an egg insulator and attach the other end of the insulator to the copper wire so that the insulator/wire is about 6' above the top of the ground rod. Leave enough wire to connect to the tuner.
Attach the rope to the ground rod and install the antenna tuner to the end of the wire and place the tuner in a plastic container to protect it from the weather.
Connect a short ground wire from the ground side of the tuner to the ground rod with a clamp and make sure all connections are tight and sealed from weather.

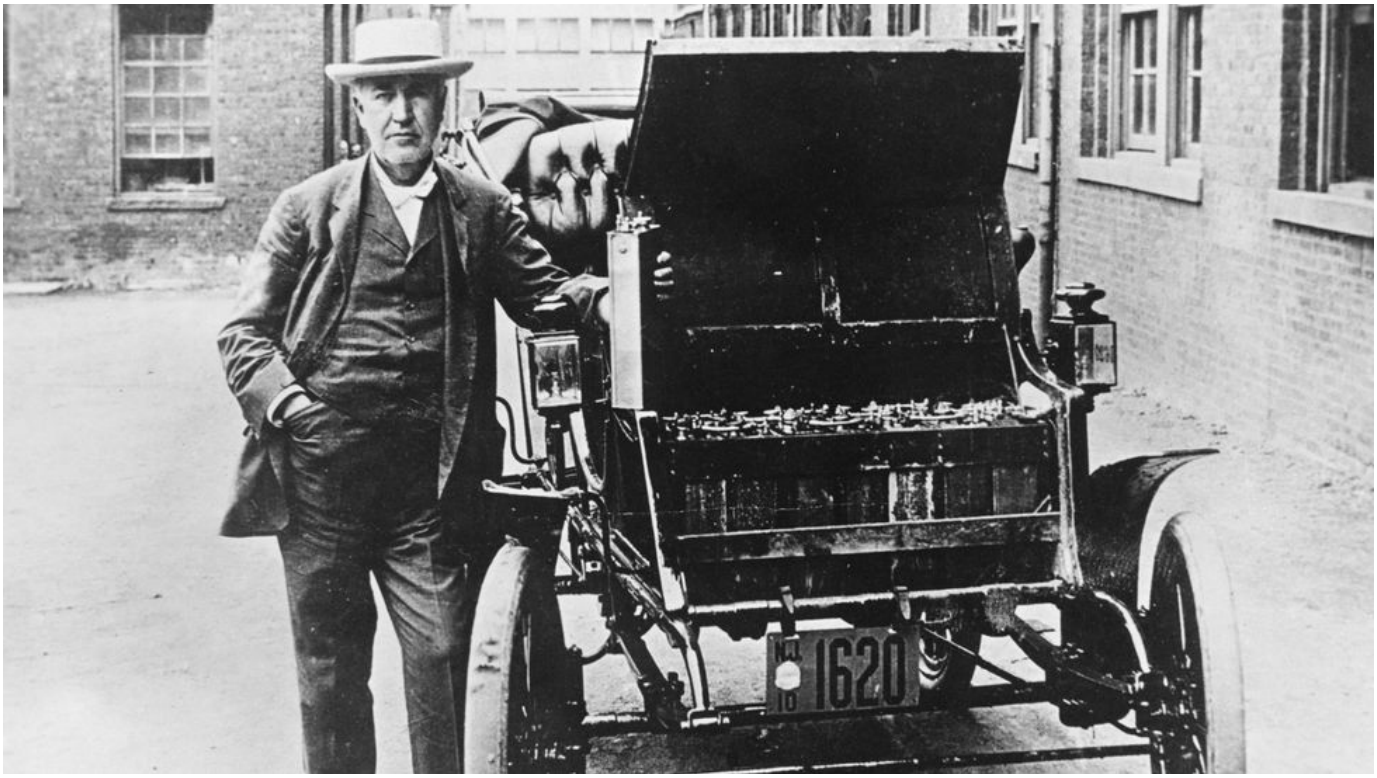
If you are wondering where the "Tree Antenna" Comes from, it's from a WWI/WWII Army Signal Corps Emergency Communications Manual.

FROM BATTERY TO BATTOLYSER

Travelling down a gravely road in West Orange, New Jersey, an electric car sped by pedestrians, some clearly surprised by the vehicle's roomy interior. It travelled at twice the speed of the more conventional vehicles it overtook, stirring up dust that perhaps tickled the noses of the horses pulling carriages steadily along the street.

It was the early 1900s, and the driver of this particular car was Thomas Edison. While electric cars weren't a novelty in the neighbourhood, most of them relied on heavy and cumbersome lead-acid batteries. Edison had outfitted his car with a new type of battery that he hoped would soon be powering vehicles throughout the country: a nickel-iron battery.

Edison claimed the nickel-iron battery was incredibly resilient, and could be charged twice as fast as lead-acid batteries. He even had a deal in place with Ford Motors to produce this purportedly more efficient electric vehicle.



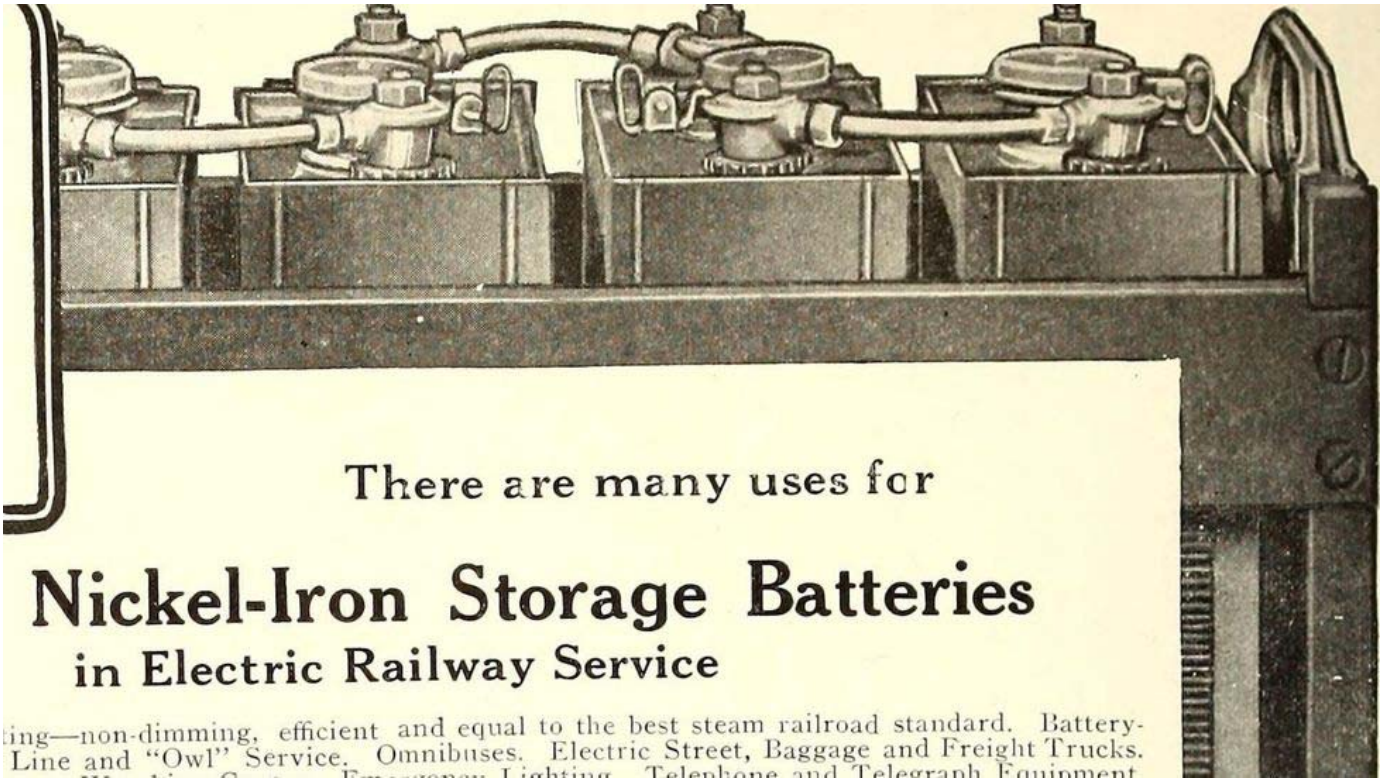
At the turn of the 20th Century, Thomas Edison invented a battery with the unusual quirk of producing hydrogen. Now, 120 years later, the battery is coming into its own.

But the nickel-iron battery did have some kinks to work out. It was larger than the more widely used lead-acid batteries, and more expensive. Also, when it was being charged, it would release hydrogen, which was considered a nuisance and could be dangerous.

More than a century later, engineers would discover the nickel-iron battery as something of a diamond in the rough.
Unfortunately, by the time Edison had a more refined prototype, electric vehicles were on the way out in favour of fossil-fuel-powered vehicles that could go longer distances before needing to refuel or recharge. Edison's deal fell by the wayside.
But more than a century later, engineers would rediscover the nickel-iron battery as something of a diamond in the rough. Now it is being investigated as an answer to an enduring challenge for renewable energy: smoothing out the intermittent nature of clean energy sources like wind and solar. And hydrogen, once considered a worrisome by-product, could turn out to be one of the most useful things about these batteries.

Speeding forward to the mid 2010s, a research team at the Delft University of Technology in the Netherlands happened upon a use for the nickel-iron battery based on the hydrogen produced. When electricity passes through the battery as its being recharged, it undergoes a chemical reaction that releases hydrogen and oxygen. The team recognised the reaction as reminiscent of the one used to release hydrogen from water, known as electrolysis. "It looked to me like the chemistry was the same," says Fokko Mulder, leader of the Delft University research team.

This water-splitting reaction is one way hydrogen is produced for use as a fuel – and an entirely clean fuel too, provided the energy used to drive the reaction is from a renewable source.
Nickel-iron batteries are extremely durable, as Edison proved in his early electric car, and some have been known to last upwards of 40 years



What used to be a dangerous quirk of the Edison battery has turned out to be remarkably useful

While Mulder and his team knew that the nickel-iron battery's electrodes were capable of splitting water, they were surprised to see that the electrodes started to have higher energy storage than before hydrogen was being produced. In other words, it became a better battery when it was used as an electrolyser too. They were also surprised to see how well the electrodes held up to the electrolysis, which can excessively tax and degrade more traditional batteries. "And, of course, we were rather content that the energy efficiency appeared to be good during all this," says Mulder, reaching levels of 80-90%.

Mulder dubbed their creation the "battolyser", and they hope their discovery can help solve two major challenges for renewable energy: energy storage and, when the batteries are full, production of clean fuel. "You'll hear all these discussions about batteries on the one hand and hydrogen on the other hand," says Mulder. "There's always been a kind of competition between those two sets of directions, but you basically need both."

Renewable value

One of the biggest challenges of renewable energy sources such as wind and solar is how unpredictable and intermittent they can be. With solar, for example, you have a surplus of energy produced during the daytime and summertime, but at night and in the winter months, the supply dwindles.

Conventional batteries, such as those based on lithium, can store energy in the short-term, but when they're fully charged they have to release any excess or they could overheat and degrade. The nickel-iron battolyser, on the other hand remains stable when fully charged, at which point it can transition to making hydrogen instead.

"[Nickel-iron batteries] are resilient, being able to withstand undercharging and overcharging better than other batteries," says John Barton, a research associate at the School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University in the UK, who also researches battolysers. "With hydrogen production, the battolyser adds multi-day and even inter-seasonal energy storage."

Besides creating hydrogen, nickel-iron batteries have other useful traits, first and foremost that they are unusually low-maintenance. They are extremely durable, as Edison proved in his early electric car, and some have been known to last upwards of 40 years. The metals needed to make the battery – nickel and iron – are also more common than, say, cobalt which is used to make conventional batteries.

This means the battolyser could have another possible role for renewable energy: helping it become more profitable.

Like any other industry, renewable energy prices fluctuate based on supply and demand. On a bright, sunny day there might be an abundance of power from solar, which can lead to a glut and a dip in the price the energy can be sold for. The battolyser, however, could help smooth out those peaks and troughs.

"When electricity prices are high, then you can discharge this battery, but when the electricity price is low, you can charge the battery and make hydrogen," says Mulder.

The battolyser is one way to help balance the supply and demand of renewable energy from sources like solar and wind

The battolyser is not alone in this regard. More traditional alkaline electrolysers coupled with batteries can perform this function too, and are widespread in the hydrogen-producing industry. Mulder thinks the battolyser can do the same thing for less money and for longer, thanks to the durability of the system. It is something that is making the battolyser's backers hopeful.
And while hydrogen is the direct product of the battolyser, other useful substances can be generated from it too, such as ammonia or methanol, which are typically easier to store and transport. "Having a battolyser in place, an ammonia plant would run more constantly and would need less manpower, reducing operating costs and maintenance costs, thus producing ammonia the cheapest way in a sustainable, green manner," says Hans Vrijenhoef, chief executive of Proton Ventures, who has invested in Mulder's battolyser.

Scaling up

Right now, the largest battolyser in existence is 15kW/15kWh, and has enough battery capacity and long-term hydrogen storage to power 1.5 households. A larger version of a 30kW/30kWh battolyser is in the works at the Magnum power station in Eemshaven in the Netherlands, where it will provide enough hydrogen to satisfy the needs of the power station.
Once it's undergone rigorous testing there, the aim is to scale-up further and distribute the battolyser to green energy producers, such as solar and wind farms. Ultimately, the battolyser's proponents hope it will reach gigawatt-scale – equivalent to the power generated by around 400 utility-scale wind turbines. Though as well as scaling-up, Barton sees a role for smaller battolysers, which could help supply energy to mini-grids used by remote communities that don't live on main power grids.

Edison's laboratory in New Jersey was the birthplace of many of his inventions, both those that gained popularity in his lifetime and those that didn't

The fact that the battolyser's electrodes are made from relatively cheap and common metals may help. And unlike lithium, nickel and iron do not create large quantities of water waste when mined, nor are they linked to significant environmental degradation.

Still, both Mulder and Barton see hurdles to overcome in terms of efficiency and capacity. "The battolyser would really benefit from increased power capacity as a battery, or reduced internal resistance," says Barton. Internal resistance is the opposition to the flow of current in a battery. The higher the internal resistance, the lower the efficiency. Improving that is something Mulder and his team are now working on.

Much of the potential of the battolyser has been hiding in plain sight, ever since Thomas Edison first began experimenting with his nickel-iron battery at the turn of the 20th Century. He may have been wrong in believing his battery would supplant the other vehicles on the road. But the nickel-iron battery may yet play a role in replacing fossil fuels more broadly, by helping hasten the transition to renewables.

~Internet

If you struggle to memorize medical terms, take a look at this cheat sheet to make things a little bit easier for you:

Artery: The study of fine paintings
Bacteria: Back door to cafeteria
Barium: What doctors do when patients die
Catscan: Searching for kitty
Cauterize: Made eye contact with her
Coma: A punctuation mark.
D&C: Where Washington is
Enema: Not a friend
ER: The things on your head that you hear with
Fester: Quicker than someone else
Genes: Blue denim slacks
G.I. Series: World Series of military baseball
Hemorrhoid: A male from outer space
Impotent: Distinguished, well-known
Medical Staff: A doctor's cane
Morbid: A higher offer than I bid
Nitrates: Cheaper than day rates
Organ Transplant: What you do to your piano when you move
Outpatient: A person who has fainted
Pap Smear: Making fun of Dad
Pathalogical: A reasonable way to go
Pharmacist: Person who makes a living dealing in agriculture
Pelvis: Second cousin to Elvis
Post Operative: A letter carrier
Recovery Room: Place to do upholstery
Rectum: Almost killed him
Red Blood Count: Dracula
Secretion: Hiding something
Seizure: Roman Emperor
Terminal Illness: Getting sick at the airport.
Thorax: A Dr. Seuss character
Triple Bypass: Better than a quarterback sneak
Tumor: More than one, an extra pair
Varicose: Near by/close by
Vein : Conceited

An engineer who was unemployed for a long time decided to open a medical clinic.
He puts a sign outside the clinic:
"A cure for your ailment guaranteed at $500; we'll pay you $1,000 if we fail."

A Doctor thinks this is a good opportunity to earn $1,000 and goes to his clinic.

Doctor: "I have lost my sense of taste."

Engineer: "Nurse, please bring the medicine from box 22 and put 3 drops in the patient's mouth."

Doctor: "This is Gasoline!"

Engineer: "Congratulations! You've got your taste back. That will be $500."

The Doctor gets annoyed and goes back after a couple of days later to recover his money.

Doctor: "I have lost my memory, I cannot remember anything."

Engineer: "Nurse, please bring the medicine from box 22 and put 3 drops in the patient's mouth."

Doctor: "But that is Gasoline!"

Engineer: "Congratulations! You've got your memory back. That will be $500."

The Doctor leaves angrily and comes back after several days, more determined than ever to make his money back.

Doctor: "My eyesight has become weak."

Engineer: "Nurse, please bring the medicine from box 11 and put 3 drops in the patient’s eyes.”

The nurse walks in carrying box #22.

Doctor: "Wait, that’s the box with the gasoline in it!”

Engineer: "Congratulations! You've got your vision back! That will be $500."

Nine medical tests you can do yourself

Wander into the back garden and piss on your neighbour's fence (again).

If it dries quickly, you have high sodium (salt) levels and pending heart problems.

If it attracts ants your sugar level is too high and you might be diabetic.

If your piss is dark and of limited quantity, you are dehydrated.

If your stream didn't reach the fence, you have a prostrate problem.

If it is bright pink you have kidney problems.

If you forgot to get your knob out and you pissed your pants, you have Alzheimer's.

If you missed the fence you have Parkinson's.

If your stream smells meaty, your cholesterol level is far too high.

If you can't smell your urine, you have Coronavirus.

Medical experts in Washington DC were asked if it is time to ease the COVID lockdowns.

Allergists were in favour of scratching it, but dermatologists advised not to make any rash moves. Gastroenterologists had a sort of a gut feeling about it, but neurologists thought the government had a lot of nerve. Obstetricians felt certain everyone was labouring under a misconception, while optometrists considered the idea short-sighted.
Many pathologists yelled, "Over my dead body!" while pediatricians said, "Oh, grow up!" Psychiatrists thought the whole idea was madness, while radiologists could see right through it. Surgeons decided to wash their hands of the whole thing and pharmacists claimed it would be a bitter pill to swallow.
Plastic surgeons opined that this proposal would "put a whole new face on the matter." Podiatrists thought it was a step forward, but urologists were pissed off by the whole idea. Anaesthetists thought the whole idea was a gas, and cardiologists didn't have the heart to say no.

At the medical appointment

Patient: Every day at 8 am I poop.

Doctor: This is good, what is the problem?

Patient: The problem is that I wake up at 9.

Dr. Mike had sex with one of his patients and felt guilty all day long. No matter how much he tried to forget about it, he just couldn't.

The guilt and sense of betrayal were overwhelming. But every once in a while he'd hear an internal, reassuring voice in his head that said: "Mike, don't worry about it. You aren't the first medical practitioner to sleep with one of your patients, and you won't be the last. And you're single. Just let it go, Mike."

But invariably another voice in his head would bring him back to reality, whispering:

What's wrong with you Mike, you're a veterinarian.

Sex and Golf

Professor Higgins at the University of Sydney was giving a lecture on 'Involuntary Muscle Contraction' to first-year medical students.

This was not an exciting subject and the professor decided to lighten up the mood.

He pointed to a young woman in the front row and asked, 'Do you know what your asshole is doing while you're having an orgasm?'

She replied, 'Probably golfing with his buddies.'

It took 45 minutes to restore order in the classroom.

When I was young, I decided to go to a medical school.

At the entrance exam, we were asked to re-arrange letters 'PNEIS' and form the name of an important human body part which is most useful when erect.

Those who answered 'SPINE' are doctors today while rest are on Reddit.

Medical College Professor to a girl student...

"Which human body part expands 5 times its normal size...?"

Girl Student: "Sir I can't answer this question, it's too embarrassing."

Professor asked the same question to a male student.

Male Student: "It's the Pupil of a human eye..."

Professor: "Correct."

Then Professor turned to the female and said:

"Listen lady, not only your thinking is wrong but your expectations are also very high...
5 times is too much!"

A pirate walks into a bar...

And takes a seat beside three medical students.

The students notice that the pirate has a hook in place of right hand, a wooden peg in place of his left leg and an eye patch over his right eye.

Curious they edge closer to the pirate, order some rum for him and ask him a few questions....

"Sir, how come you ended up with that wooden peg for your leg ?" asks one student.

"Arrgh..this..? I fell aboard a terrible gale and had me leg chomped off by a bloody shark...that's how I ended up with this peg", the pirate answered.

"And what's the story with the hook ?" asked another student.

"Ah this...yeah. I took part in a big battle against some lobster backs and one of them cut me hand off with his sword. From then I got this hook", the pirate answered.

"Wow...and whats the story with the eye ?"

"Oh, the eye...", the pirate blushed a bit and continued, "A bloody seagull dropping fell in it."

"What ? You lost it to some seagull poop ?" The students asked surprised.

Now turning red the pirate answered, "Well it was my first day with the hook."

Why does Bill Gates make for a terrible medical expert?

Because he can't get rid of viruses in Microsoft either.

Dog Tags


HAVE YOUR
PEOPLE CALL
MY PEOPLE


FREE BEER
upon return


OBEDIENCE
SCHOOL
DROPOUT

NEVARC Net

40 Meter Net

7 Days a Week

10am Local time

(East coast)

7.097 MHz LSB

Approximately + or – QRM

Hosted by Ron VK3AHR

"Australia Ham Radio 40 Meter Net"

President, VK2VU, Gary
Vice President, Tom VK3NXT
Secretary, VK2FKLR, Kathleen
Treasurer, Amy

NEVARC CLUB PROFILE

History

The North East Victoria Amateur Radio Club (NEVARC) formed in 2014.
As of the 7th August 2014, Incorporated, Registered Incorporation number A0061589C.
NEVARC is an affiliated club of the Wireless Institute of Australia and The Radio Amateur Society of Australia Inc.

Meetings

Meetings details are on the club website, the Second Sunday of every month, check for latest scheduled details.
Meetings held at the Belviour Guides Hall, 6 Silva Drive West Wodonga.
Meetings commence with a BBQ (with a donation tin for meat) at 12pm with meeting afterwards.
Members are encouraged to turn up a little earlier for clubroom maintenance.
Call in Via VK3RWO, 146.975, 123 Hz tone.

VK3ANE NETS

HF

7.097 MHz	7 Days a Week - 10am Local time
3.622 MHz	Wednesday - 8.30pm Local time

Benefits

To provide the opportunity for Amateur Radio Operators and Short Wave Listeners to enhance their hobby through interaction with other Amateur Radio Operators and Short Wave Listeners. Free technology and related presentations, sponsored construction activities, discounted (and sometimes free) equipment, network of likeminded radio and electronics enthusiasts. Excellent club facilities and environment, ample car parking.

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All editors' comments and other opinions in submitted articles may not always represent the opinions of the committee or the members of NEVARC, but published in spirit, to promote interest and active discussion on club activities and the promotion of Amateur Radio.
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Please include a stamped self-addressed envelope if you require your submission notes returned.
Email attachments not to exceed 5 Mb in file size. If you have more than 5 Mb, then send it split, in several emails to us.
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Any dates, times and locations given for upcoming events please check with a reliable source closer to the event.
This is particularly true for pre-planned outdoor activities affected by adverse weather etc.
The club website http://nevarc.org.au/has current information on planned events and scheduled meeting dates.
You can get the WIA News sent to your inbox each week by simply clicking a link and entering your email address found at www.wia.org.au The links for either text email or MP3 voice files are there as well as Podcasts and Twitter. This WIA service is FREE.